ABSTRACT OF THE DISCLOSURE

A curve interpolation method capable of obtaining a curve approximating an original curve based on a sequence of command points within a tolerance set for the original curve, and performing interpolation on the obtained curve. Points $Q_1, ..., Q_{2n}$ are interpolated between respective two adjacent command points $(P_0, P_1), (P_1, P_2), ..., (P_{n-1}, P_n)$ as shape-defining points. The shape-defining points are positioned within a tolerance width $2w$ set to the original curve. One shape-defining point and shape-defining points surrounding the one shape-defining point are successively selected and an approximate curve for the selected shape-defining points is successively created. The one shape-defining point is moved towards the approximate curve to determine a modified shape-defining point for the one shape-defining point. A smooth curve passing a sequence of the modified shape-defining points is created and interpolation for machining is performed on the created curve. Since the shape-defining points are positioned closer to an original target curve within a tolerance width set to the original curve than the command points, the created smooth curve passing the sequence of modified shape-defining points is well approximating the original target curve within the tolerance width.